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COMMENTS ON THE GENUS *CERCYONIS* SCUDDER
WITH FIGURES OF TYPES (SATYRIDAE)*

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IT IS PERIODICALLY NECESSARY to review each genus that is composed of dynamic species and especially to re-assess the earlier opinions of taxonomists in the light of newer knowledge. This is especially true for names that have long been relegated to synonymy. During a study of the names proposed by William Henry Edwards for the North American Satyridae described by him, I have become quite familiar with the extant types for all of the names proposed in the genus *Cercyonis*, a genus that is confusing to most students of North American butterflies.

In the past several serious studies of the genus have been made. W. H. Edwards proposed a large number of the names now in use and carried out extensive studies of the life histories of these insects. He wrote two syntheses of the genus, the last in 1880. W. J. Holland (1898, 1931) reviewed the entire North American fauna in his "Butterfly Book" in which he adopted an approach that is closer to Linnaean than modern. Dr. J. McDonnough carefully reviewed the genus in preparation of two check-lists but did not publish all of his findings. Weymer's analysis of the genus in Seitz' (1911) largely followed Holland. Dr. John A. Comstock inquired critically into the Californian species for his "Butterflies of California" (1927). Dos Passos (1964) in his check-list largely followed McDonnough. None of these later authors published a critical study of the genus as a whole. Such a study is needed, and is in progress by several rhopalocerists.

Three generic names have found common acceptance for the genus at different times. Throughout the nineteenth century, *Satyrus* Latreille was popular. According to Hemming (1931) the type species of this genus is *Papilio galathea* Linnaeus, 1758. In this he followed Scudder, 1875. In Opinion 142 of the International Commission on Zoological Nomenclature, published

*This study developed from my study of W. H. Edward's types of Satyridae which was supported by N.S.F. Grant GB-194.

March 25, 1943, the generic name *Satyrus* Latreille, 1810, was placed on the Official List of Generic Names in Zoology (No. 569) with *Papilio actaea* Esper [1780] as the type species.

In [1810] Huebner used the generic name *Minois* for the Linnean species *Papilio phaedra* (1764), which Scopali had named *Papilio dryas* in 1763, and for six other species. Butler (1868) selected *phaedra* as the type from this array.

Scudder validated Speyer's manuscript name *Cercyonis* (1875a) with *Papilio alope* Fabricius, 1793, as the type.

Superficially, the three type-species, while specifically distinctive have been considered very much alike. The two European species, types of *Satyrus* and *Minois,* have only the subcostal vein of the fore wing inflated. The type of *Cercyonis* has this vein grossly inflated and the base of the cubital vein quite noticeably so. Also, the spines on the mid tarsii are arranged differently on *Cercyonis.*

Lee Miller (*in litt.*) has given me the genefit of his doctoral thesis (University of Pittsburgh, Pennsylvania, 1965), a study of the genera of the Satyridae. On the basis of very careful anatomical studies of the type-species of the generic names that have been proposed, Miller has come to the conclusion that not only is *Cercyonis* not synonymous with either *Satyrus* or *Minois,* but it is a member of a different tribe. *Satyrus* and *Minois* are members of the tribe Satyrini in the subfamily Satyrinae. The nearctic members of this tribe are *Neominois* and *Oeneis.* The genus *Cercyonis* is the only nearctic member of the tribe Maniolini, another tribe within the subfamily Satryinae. It is only through such careful studies as Miller's, on a world-wide basis, that order comes from the chaos of many studies of restricted faunae.

In this paper I have brought together the information that I have found about the names proposed by Fabricius, Boisduval, Kirby and Behr that now are included in *Cercyonis.* This is what was known of the genus before Edward's work, which was previously reviewed by me (1964). Here I treat only the nomenclatorial problems. The taxonomic problems will be treated in studies now under way by several specialists studying the genus.

I. Johann Christian Fabricius (1745-1808)

The honor of naming the first member of this genus falls to Linnaeus's student Fabricius. It is apparent that Peter Kalm who collected in "Pennsylvania and Canada" in 1747 for his old professor, Linnaeus, did not capture any specimens of species now included in *Cercyonis.* Fabricius named two species from North America, *pegala* and *alope.*

Mrs. Ella Zimsen, the Danish authority on Fabricius, has written to me (25.ii.65) about these species. "Fabricius met Mr. Hunter, the reknown anatomist, during his stay in London in 1767, from whose collection he described a great number of insects, including *pegala* . . . Hunter's collection is now kept at the University of Glasgow, where the species is represented by two specimens." Thus the types of *pegala*, two hundred years old, are preserved. I wrote to the University of Glasgow and through the goodness of Dr. Roy A. Crowson I am able to reproduce here photographs of the types.

Mrs. Zimsen continued, "*Papilio alope* F. was described . . . and the locality and collector were given as ex India Dom. Francillon. The type of *alope* probably has been lost, no specimen exists in Fabricius's collection, and I have not been able to find any information about Francillon. Fabricius was domiciled for many years in Paris and may here have described the species from Francillon's collection, which most probably exists no more. The locality must be a misprint made by Fabricius, maybe the locality should have been "ex Indiis Francillon" = The West-Indian Islands." What I have found out about Francillon's collection I have detailed in my discussion of *alope*.

The results of Mrs. Zimsen's careful studies have been published and a full reference will be found in the bibliography of this paper.

"*Papilio Pegala*"

1775. *Systema Entomologiae, etc.* no. 223, p. 494.

The key phrase in the original description is "*anticis fascia rufa ocelloque unico*". True *pegala* thus is recognized by the rust-tinted yellow field on the upper side of the fore wing in which there is a single ocellus (anterior). This is the form that is found in the coastal woodlands of southern Georgia and from there northward. It is distinctly maritime and not found inland. Inland its place is taken by *alope* as far south as Georgia. There is a tendency for *pegala* to be somewhat larger than *alope*, especially the females. Also, on the underside of the hind wings the ocelli that compose the anterior triad all are clearly oval, or at least the second and third are. The third ocellus in this group is almost circular on *alope*.

Fabricius and his brother visited England for the first time in 1767. They spent the summer riding and collecting in the Scottish Highlands and in the fall of the year rode south to London.

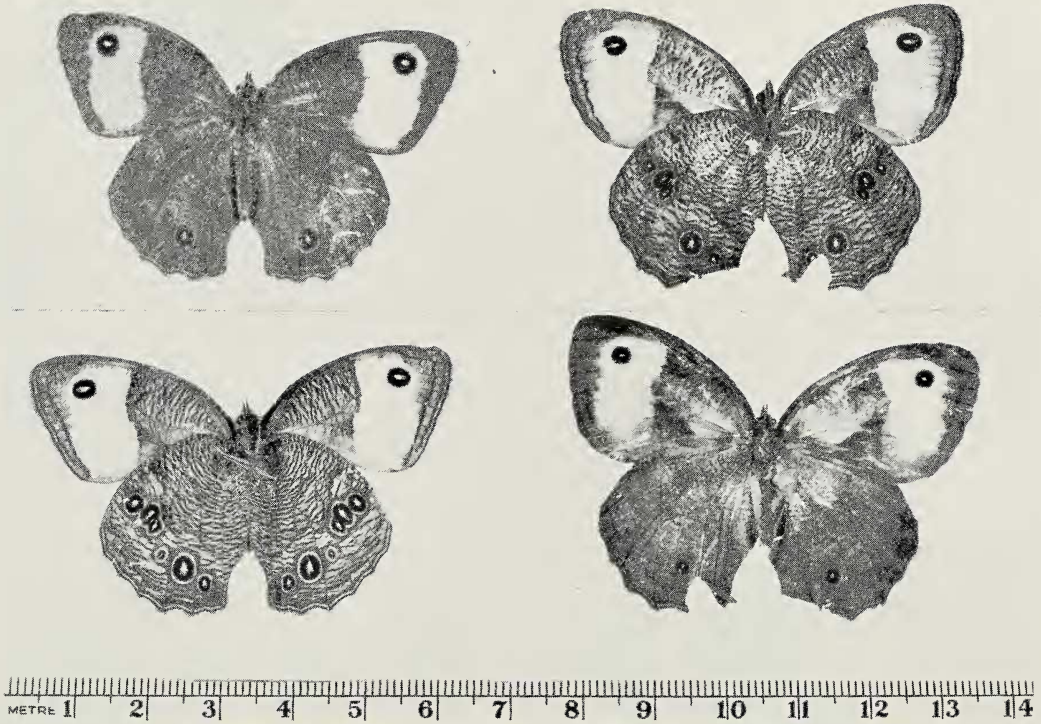

Fig. 1. *Papilio pegala* Fabricius: lectotype (left) and paratype (right) in the zoological museum, The University, Glasgow, Scotland.

"There Fabricius met Solander, who was attached to the British Museum. Fabricius' days were now spent on working on entomology, and in the evenings he would frequent the scientific club where he met Hunter, Drury, Eaton, Fothergill, and several others. All of them opened their homes to him, and he was free to go through their collections and describe new species." (Zimsen, 1964, p. 8) Fabricius returned to Copenhagen in the fall of 1769 but returned to London each summer for several years thereafter to continue his work on the collections of his friends.

Dr. John Hunter (1728-1793) is well-known for his contributions to anatomy. After serving an apprenticeship to his brother William and other doctors in London, he was accepted as an army surgeon, and, attached to the British Navy, he sailed to the Spanish Main during the Seven Years War. While in this service he collected insects on the island of Jamaica and in Carolina. The ships of the British Navy used Charleston, South Carolina, as a provendering port during the early 1750's at the time Hunter was serving with the fleet. The region around Savannah, Georgia, tacitly has been considered the probably type locality for *pegala*. This cannot be defended on the basis of history. At the time in question that area of the coast was being claimed, and raided, by the Spaniards. The port of Savannah was not a safe one for the British fleet.

Thus on the basis of history and Hunter's presence with the British fleet, I am here designating the vicinity of Charleston, South Carolina, as the most appropriate type locality for *pegala*.

The two specimens from Hunter's Collection in the museum at The University, Glasgow, are typical of the sort of *pegala* found in the more northern parts of the range of the taxon. Thus the insects themselves support the restriction of the type locality to Charleston. One of the specimens is in perfect condition, an amazing fact considering that it had been collected over two hundred years ago. The other is somewhat rubbed, lacks one antenna and the anal angles of the hind wings are somewhat torn. Dr. Crowson suggested that the more perfect specimen be selected as the lectotype. In this I concur. Not only is it in better condition but of the two it fits perfectly Fabricius's original description. The remaining specimen is the paratype of the name. Both of these historic specimens are figured here.

"Papilio Alope"

1793. *Entomologica Systematica, etc.* 3:229, no. 715

The key phrases in this description are *"fascia flava; ocellis duobus"*. True *alope* bears a yellow field on the fore wing in which there are two ocelli. This is the characteristic form from the North Atlantic states. The only Indian butterflies that approach the description of *alope* are *Eumenis*, and these do not show six ocelli on the underside of the hind wing. Usually there is no more than one minute ocellus present on Indian *Eumenis*. There is no question but Fabricius had before him the North American butterfly known as *alope*.

To fix upon a probable type locality for *alope*, it has been necessary to search out what I could about Francillon. While reading through Kirby's part of "Fauna boreali-America" in search of information about the source of *nephele*, I discovered that Francillon's collection has been dispersed through sales. Thus the posibility that the type of *alope* exists and can be recognized is very slight. All of my inquiries about it have been fruitless.

John Francillon had been a silversmith in London, England, with a place of business on the Strand. He possessed a very fine collection of insects and, apparently, had been one of the several English entomologists who had employed John Abbot to collect for them in America. Francillon acted as Abbot's agent in England and disposed of both the insects Abbot sent and the water-colour plates of birds, insects and flowers that he produced in great numbers. It seems most probable that Abbot was the collector of the type of *alope*.

If this reasonable assumption is accepted, then the movements of Abbot in America before 1793 are important to us. John Abbot arrived on the James River in Virginia on September 9th, 1773. He stayed in Virginia through 1775 and then moved to Georgia. He served with the Revolutionary Army during the American Revolution and for his services was granted something over 500 acres of land in Georgia. While in Virginia Abbot collected insects and made water-colored drawings which he sent back to England for disposal. There were two such shipments and both were lost at sea. Thus, unless Abbot retained Virginian material when he moved to Georgia, none of his collections made in the first two years of his stay in America survived.

Abbot first settled in Burke County, Georgia, and spent most of his sixty years in America in that county, Screven County and

Bulloch County, although he lived for short periods around Savannah. I believe that the most likely source of the type of *alope* is the Burke-Screven-Bulloch counties region of Georgia and here restrict it to that region. When a neotype is selected for the name *alope* it should come from that area and then the locality from which the neotype came will further restrict the type locality.

II. William Kirby (1759-1850)

William Kirby was an English clergyman whose avocation was the study of insects. He contributed the section on insects to John Richardson's account of the natural history materials brought back to England by Captain Sir John Franklin's expeditions to boreal North America. There were three of these expeditions, the last of which resulted in the death of Franklin and his entire party. Kirby's account reported all known species from what now is Canada. The majority of these were from his own collection, not from collections made by the Franklin expeditions.

To settle upon a probable type locality for *nephele* it has been necessary to discover something about "Dr. Bigsby". Through the courtesy of the librarians of the University of Toronto and of the Hudson's Bay Company, I have learned a great deal about the man. Dr. John Jeremiah Bigsby (1792-1881) was trained as a doctor of medicine. Soon after graduating from the Univeristy of Edinburgh he joined the army and in 1818 was sent to Canada. There he developed his great interest in geology. The gold Bigsby Medal of the Geological Society, awarded biennially to outstanding students of American geology who are under 45 years of age, was made possible by him. In 1819 he was commissioned to study the geology of Upper Canada and in 1822 he became the medical officer and secretary of the British party engaged upon a survey of the international boundary between the United States and Canada. He returned to England in 1827 and settled in Newark, Nottinghamshire, England, where he practiced medicine until 1846, when he moved to London.

During his exploration of western Ontario, Bigsby collected insects of all sorts and sent them to the Rev. William Kirby. These Kirby included in his study of the insects of northern America, part IV of "Fauna boreali-America". Bigsby published an account of his explorations in Canada in two volumes in 1850. This he titled "The Shoe and Canoe." From this account it is possible to restrict somewhat the type locality of *nephele* from "Canada". With a firm confidence it can be said that the type

of *nephele* was collected in western Ontario in the vicinity of the Great Lakes. Most of the insects noted by Kirby as received from Dr. Bigsby came from the shores of Lake Huron and the vicinity of Lake St. Claire.

Dr. Bigsby placed at the end of volume two of "The Shoe and Canoe" an appendix (C) listing the insects that he had collected on his journeys in Upper Canada and had sent to Kirby. As a preface to this list he stated that the majority of the specimens were taken along the northern shores of Lake Huron. In this list those specimens collected at Lake St. Claire are specifically marked as such. No statement is made for *nephele* other than "Upper Canada". Elsewhere I have published (1965) the details of my search for the precise localities from which Bigsby sent material to Kirby. Suffice to say here that the type locality for *nephele* is the Canadian islands at the extreme eastern end of the waterway that connects Lake Superior with Lake Huron.

The discovery of the type locality for *nephele* poses a critical taxonomic problem. All of our biological knowledge of *nephele* rests upon W. H. Edward's assumption that the dark form of *alope* found in the Catskill Mountains and elsewhere in the North Atlantic States is *nephele*. Edwards separated *olympus* from *nephele* on the basis of the difference he observed in the markings of the late instar larvae. The type locality for *nephele* lies closer to the source of *olympus*, the vicinity of Chicago, Illinois, than it does to the source of Edwards's "*nephele*" larvae, the Catskills. Until two things are done we will not know whether or not *nephele* Kirby and *olympus* Edwards are synonymous. These are: 1.) proof that the larvae of *olympus* are constantly different from the larvae of eastern *alope* in the late stages; and, 2.) proof that the larvae of *nephele* Kirby are like those of *alope* or like those of *olympus* in their late stages.

A search for the type of *nephele* Kirby has been unsuccessful. According to the records of the British Museum (N.H.) Kirby's insect collection was received by them. Capt. N. D. Riley, Keeper-emeritus of the Lepidoptera, made a search for me to locate the type of *nephele*. The result of the search revealed that there are no Kirby butterflies at the museum. Either Kirby disposed of them elsewhere or they no longer can be recognized. The botanist Hooker, at the University, Glasgow, was a good friend of Kirby and through him Kirby studied the butterflies and other insects at that institution. Dr. Crowson informed me that there is no Kirby material there. Other inquiries have been equally negative. Thus I am forced to conclude that the type of *nephele* no longer exists or no longer is recognizable. This means that

one of the current specialists reviewing the genus should select a specimen from the region that is the type locality as neotype for the name.

III. Jean Baptiste Alphonse Dechaullour de Boisduval (1799-1879)

The first western members of the genus *Cercyonis* were described by Boisduval. These had been collected by Pierre Joseph Michel Lorquin (1797-1873) who had joined the gold-rush of 1849 to California and stayed to collect insects. Boisduval had the degree Doctor of Medicine and his entomological interests were avocational. The record of Boisduval's studies of Californian butterflies collected by Lorquin are found in two papers, the first published in 1852 and the second in 1868-1869. In the first of these he described *Satyrus ariane* and *Satyrus sthenele*, in the second *Satyrus oetus*. All three now are included in *Cercyonis*.

"Satyrus ariane"

1852 — *Annales de la Société Entomologique de France*, ser. 2, 10:307.

Fordyce Grinnell (1904) presented a brief account of Lorquin learned from his son. From this it appears that Lorquin arrived in California in 1850, and immediately traveled to the placer mines in Tuolumne County where he may have combined gold-washing, the practice of law and collecting insects. In 1852 Lorquin sent for his family and after their arrival set out upon a tour of northern California. Boisduval (1868 p. 6) notes that Lorquin was not successful at the mines and retreated to San Francisco before sending for his family. Thus we are restrained in selecting a type locality for *ariane* by what is known of Lorquin's movements in California after his arrival and previous to to the publication of the name *ariane* in 1852. I here restrict the type locality from "Californie" to Tuolumne County, California, and leave further pin-pointing to one of the specialists studying the genus.

The types of *ariane* are preserved in the United States National Museum in Washington, D. C. They arrived there with the William Barnes Collection, having previously been owned by Oberthus who had received them from Boisduval. There are four specimens of *ariane* from the Boisduval collection, two males and two females. This is the usual suite preserved by Boisduval when material was available. From the description is it obvious that the males and not the females were under consideration by Bois-

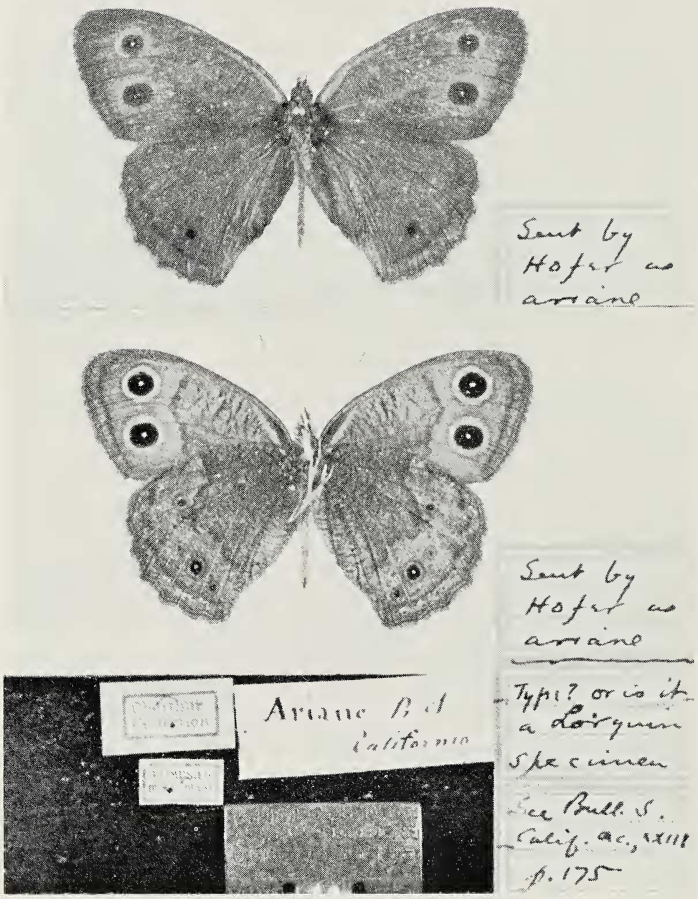

Fig. 2. *Satyrus ariane* Boisduval: lectotype in United States National Museum.

duval at the time he proposed the name *ariane*. In fact, the females may be *boopis* Behr, as suggested by Dr. John A. Comstock (1924). One of the males is accompanied by Boisduval's handlettered label "Ariane Bd / California". This specimen is perfectly described in the original description and probably was the model for Oberthur's figure 2180 on plate CCXL in volume IX of his "Etudes de Lepidopterologie Comparee." His figure 2181, on the same plate, is a female from the two just noted. Here I reproduce a photograph made by Mr. Cyril F. dos Passos of the male I have selected to be the lectotype. It is the male specimen noted above as probably the model for Oberthur's figure 2180.

"Satyrus sthenele"

1852 — *Annales de la Societe Entomologique de France,* ser. 2, 10:308.

Boisduval erroneously stated, "il vole dans le lieux eleves en juillet". This species was known only from San Francisco where it is now extinct. Lorquin probably collected the Boisduval material when he first landed in 1850, or upon a subsequent visit to the city during 1851. Thus the type locality for *sthenele* is San Francisco, California, but this only is of historic interest.

There are two Boisduval specimens in the Barnes Collection at the United States National Museum. The male of this pair is accompanied by a label hand-lettered by Boisduval, "Sthenele B.d. / Californ." This specimen I designate the lectotype of the name. It is the model for Oberthur's (l.c.) male figure 2182 of *sthenele.*

"Satyrus oetus"

1869 — *Annales de la Société Entomologique de Belgique,* 12:63.

Boisduval's description of the type locality is "Il se trouve dans le lieux rocailleux des montagnes en juillet." This is less than accurate since *oetus* is not a butterfly of the rock slide but of the dry grasslands and scrub. Such areas often are pebble paved and this is what Lorquin may have meant and was confused by Boisduval.

Early American students of butterflies were confused about *oetus* and it was not until the closing years of the 1870's that the species was properly recognized. This happened only because Boisduval loaned W. H. Edwards the type of *oetus* for comparison with material in collections in this country. The usual confusion was between *oetus* Boisduval and *silvestris* Edwards. In fact, Boisduval himself was inclined to believe that he had redescribed *silvestris* when he named *oetus.* As a result, Boisduval's female specimen is accompanied by his label which read "Silvestris Edw. / oetus B. Calif."

Fig. 3. *Satyrus sthenele* Boisduval: lectotype in United States National Museum.

There are two females of *oetus* in the Barnes Collection at the United States National Museum that had been in Boisduval's collection. One of these Oberthur labeled a male (figure 2203), the other correctly (figure 2204).

Neither the notes made by W. H. Edwards nor those of Henry Edwards from the specimen loaned by Boisduval to W. H. Edwards states the sex of the specimen. Neither of the two females from the Oberthur Collection wholly satisfies Boisduval's description of that sex. Both have only one ocellus on the upper side of the fore wing. It is obvious that Boisduval had other specimens of *oetus* than we now recognize as his. However in dealing with collections over a hundred years old it sometimes is necessary to make shift with what is available. In this case it appears that one of the females will have to stand as the lectotype. Thus I name the specimen called "type" by Oberthur and used as the model for his figure 2204 the lectotype of *Satyrus oetus*

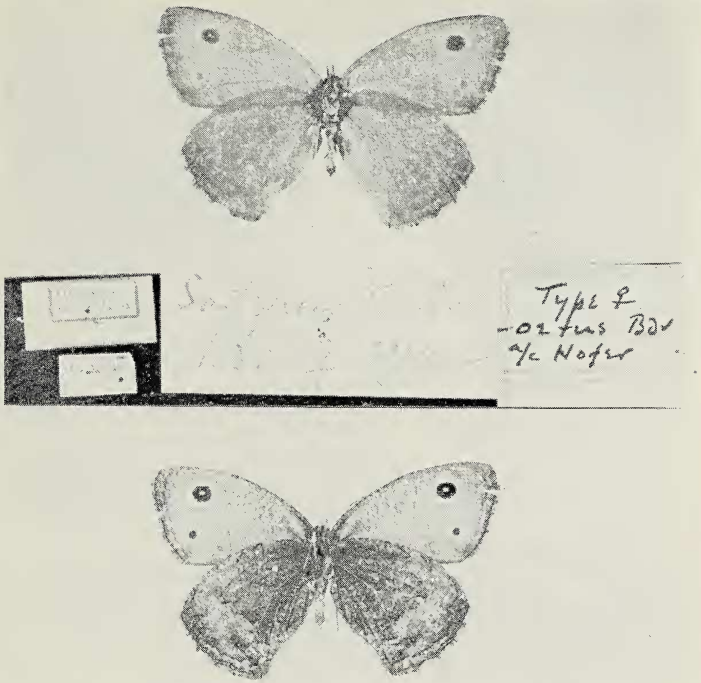

Fig. 4. *Satyrus oetus* Boisduval: lectotype in United States National Museum.

Boisduval. This specimen was chosen because the other had been erroneously named a male (fig. 2203) by Oberthur and because the shape of the apical ocellus on the underside of the fore wings of that specimen is malformed.

We have no way to determine where the lectotype came from in California. I leave the nomination of a type locality to the taxonomists dealing with the problem. Boisduval (1868 pp. 6-7) gives a little information to guide that selection. I quote here pertinent parts of Boisduval's delightfully Gallic account.

"Devenu plus libre de sin temps at eyant près de lui sa famille qui était venu le rejoindre, il sentit l'amour des sciences naturelles et surtout de l' entomologie se réveiller en lue. Pour se livrer à ses gout, il ne graignit pas s'imposer de rudes privations et de grandes fatigues: il explora d'abord tous les enviorone de San Francisco, pius les bords du Sacramento et le la Plume, fit des voyages dans le chaîne de la Sierra-Nevada et s'aventura jusque dans les forêts de l'intérier, bravant la dent des ours et les crochets des serpents a sonnets. . . . Depuis cette époque, le zèle de M. Lorquin ne se ralentit pas, au contraire, ayant plus de loissirs, il entreprit des voyages dans des régions inexplores: il alla visiter les montagnes du nord, pénétra fort avant dans l'est et se dirigea plus tard chez les Apaches, jusqu'à Los Angeles en Sonora. . . ."

IV. Hans Herman Behr (1818-1904)

Dr. Behr was a physician and naturalist-extraordinary. He was a friend of von Humbolt, who urged him to go to Australia in 1844 to study the bushmen as well as to collect insects and plants. He spent four years in the Indo-Australian region collecting and studying. No sooner had he returned to Germany in 1848 than he sailed for Brazil and the other South American countries. From there he journeyed to the Philippines and lived in Manila for two years. He arrived in San Francisco in 1851, and spent the rest of his life there. Among others, he described one butterfly that now is placed in the genus *Cercyonis*.

"Satyrus boopis"

1864 — Proceedings of the California Academy of Natural Sciences, [ser. 1], 3:164.

First, let me point out that Behr may have had confused *oetus* and *silvestris*, and that the "three allied species" are *sthenele*, *boopis* and "*silvestris*". It was not until Edwards rediscovered the types of *silvestris* in the late 1880's that the definition of the name became clear. Second, Behr considered material that later was named *gabbii* to be typical of *ariane*. Thus the misidentification of typical *ariane* probably led him to re-describe the taxon. Unfortunately, full proof of this is impossible since Behr's types were destroyed in the San Francisco earthquake and fire of 1906. The nearest thing to a type that exists is specimens sent to Edwards and Strecker by Behr bearing Behr's identification. These are not types in any sense of the word. Strecker considered his specimens from Behr to be the types. There is absolutely nothing in the letters written by Behr to Strecker that purports them to be such.

Behr stated clearly that his original material came from Contra Costa County. Thus a specimen from that county should be made the neotype. When this is done its point of capture may be taken as the type locality.

SUMMARY

alope Fabricius, 1793, type lost; type locality vicinity of Burke-Screven-Bulloch counties, Georgia.

ariane Boisduval, 1852, type at the United States National Museum; type locality, Tuolumne County, California.

boopis Behr, 1864, type lost; type locality, Contra Costa County, California.

nephele Kirby, 1837, type lost; type locality, vicinity of St. Josephs Island, Ontario, Canada.

oetus Boisduval, 1869, type at the United State National Museum; type locality, "Californie".

pegala Fabricius, 1775, type at The University, Glasgow, Scotland; type locality is vicinity of Charleston, South Carolina.

sthenele Boisduval, 1862, type at the United State National Museum; type locality, San Francisco, California.

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SATYRIDES.

58. Satyrus Ariane.

Alæ nigro fuscæ; anticæ utrinque oculis duobus atris, pupilla alba iride fulvo; posticæ subtus strigis duabus undulatis obscuris, ocellis sex plus minusve obsoletis.

Port et taille de notre *Phœdra*. Dessus des ailes d'un brun-noirâtre. Celui des supérieures avec deux yeux noirs pupillés de blanc, à iris un peu plus pâle; celui des inférieures avec un œil plus petit, souvent précédé d'un autre petit œil sans prunelle. Dessous des ailes également brun, avec des hachures plus obscures, les yeux des premières ailes entourés d'un iris fauve, précédés d'une ligne transversale brune, et suivis près de la frange de trois lignes très fines, parallèles; celui des secondes ailes traversé au milieu par deux lignes brunes sinueuses, suivies d'une rangée irrégulière de six petits yeux noirs, à pupille blanche et à iris fauve, groupés trois par trois, et plus ou moins bien marqués. Femelle beaucoup plus grande que le mâle; les yeux des ailes supérieures grands, cerclés de jaune-fauve en dessus comme en dessous; les petits yeux du dessous des ailes inférieures beaucoup moins visibles que dans les mâles.

Se trouve communément dans les forêts. Ce Satyre se place entre notre *Phœdra* et l'*Alope* des Etats-Unis.

59. Satyrus Sthenele.

Alæ dentatæ fuscæ ; anticæ ocellis duobus nigris pupilla alba ; subtus cinereæ, ocellis anticarum iride fulva ; posticæ fascia media angulata ocellisque duobus analibus.

Port et taille de nos plus petits individus de *Fauna*. Dessus des ailes brun, avec la frange d'un gris-cendré, entrecoupée de noir; celui des supérieures avec deux petits yeux noirs à prunelle blanche; celui des inférieures sans taches. Dessous des ailes d'un gris-cendré, plus foncé à la base; celui des supérieures avec les deux yeux plus grands et cerclés de jaune-fauve; celui des infé-

rieures traversé par une large bande brune anguleuse, et marqué vers l'angle anal de deux petits yeux noirs à prunelle blanche. Femelle un peu plus grande que le mâle, ayant les yeux des ailes supérieures cerclés de fauve en dessus comme en dessous.

Beaucoup plus rare que le précédent.

62. **Satyrus Œtus,** Boisd.

Alæ supra fuscæ; anticæ ocello unico; subtus: anticæ ocellis duobus pupillatis iride fulva; posticæ sub-cinereo viriegatæ ocellis duobus analibus minutissimis.

Beaucoup plus petit que notre *Fauna* dont il a le port. Le dessus des ailes est brun, avec un petit œil noir non pupillé, vers le sommet des supérieures. Le dessous de ces mêmes ailes est un peu plus pâle, avec deux yeux noirs, pupillés de blanc, à iris fauve; celui des inférieures est un peu plus obscur, très légèrement ondé de grisâtre avec deux petites lignes transversales noirâtres en zizag; outre cela il y a vers l'angle anal sur une petite bande noirâtre deux petits yeux noirs pupillés de blanc.

La femelle se distingue du mâle en ce qu'elle offre quelquefois en dessus deux yeux à iris un peu fauve.

Le mâle a aussi pour caractère, sur ses premières ailes, un épi oblique de couleur un peu plus obscure que le fond.

Il se trouve dans les lieux rocailleux des montagnes en juillet.

SATYRUS BOOPIS Behr.

Sthenele similis at limbus non tesselatus, sed linea transversa distincte partitus et fœminæ ocelli alarum superiorum in fascia dilutiori positi. Alae subtusdimidiatæ pars radicalis brunnea, marginalis grisea, marginem versus brunnescens. Utraque marmorata, halone ocellorum in alis anticis solo excepto dilutiori et concolori.

This *Satyrus* is the biggest of our Californian species, the male being nearly double the size of the female of *S. Sylvestris*. I find this *Satyrus* in July in Contra Costa, on the hills as well as on the plains. In regard to the diagnosis of these three closely allied species, I would mention, that the presence or absence of one or two more or less distinct eye-marks, on the upper or under side near the anal angle of the hind wings, is of no diagnostic importance.

Pegala. 223. P. N. G. alis dentatis, fuscis: anticis fascia rufa ocelloque unico, posticis supra ocello, subtus sex.

Habitat in America. *Musf. D. Hunter.*

Magnitudo P. Semele. Corpus fuscum. Alae anticae fuscae, fascia lata rufa, quae tamen margines haud attingit. Ocellus utrinque unicus, pupilla alba. Posticae supra fuscae, ocello atro, iride fulva pupillaque alba, subtus variegatae, ocellis sex atris, iride ferruginea pupillaque albida. Tres e his ocellis ad marginem tenuiorem connati, quintus maximus.

Variat interdum ocello primo et quarto obsoletis.

715. P. S. alis dentatis fuscis: anticis utrinque fascia flava; ocellis duobus, posticis ocello supra unico subtus sex. ***Alope.***

Papilio Alope. Jon. fig. pict. 4. tab. 12. fig. 1.

Habitat in India Dom. Francillon.

Corpus medium, fuscum. Alae anticae concolores, fuscae fascia lata, abbreviata, flava & in hac ocelli duo atri pupilla alba strigaque postica atra. Subtus obscurae, fusco irroratae ocellis sex pupilla alba.